

THAT WHICH IS CLAIMED:

1. A head restraint for a vehicle seat, wherein the head restraint operates favorably in response to an event  
5 of predetermined magnitude, and the head restraint comprises:

a first subassembly;

a second subassembly mounted for moving forward relative to the first subassembly;

10 a drive mounted for moving the second subassembly forward relative to the first subassembly; and

a locking unit operative for having:

a locked state prior to the event of predetermined magnitude, wherein in the locked state the  
15 locking unit prevents the drive from moving the second subassembly forward relative to the first subassembly, and

an unlocked state in response to the event of predetermined magnitude, wherein in the unlocked state  
20 the locking unit does not prevent the drive from moving the second subassembly forward relative to the first subassembly, whereby the drive moves the second subassembly forward relative to the first subassembly in response to the event of predetermined magnitude,

25 wherein the locking unit comprises a magnet arranged so that a magnetic field of the magnet is operative for maintaining the locking unit in the locked state prior to the event of predetermined magnitude.

30 2. A head restraint according to Claim 1, wherein the magnet is a permanent magnet and the locking unit further comprises a coil that is for producing a magnetic field in response to the coil being electrically energized.

3. A head restraint according to Claim 2, wherein  
the coil is arranged so that the magnetic field produced  
by the coil counteracts the magnetic field of the  
5 permanent and thereby causes the locking unit to  
transition to the unlocked state.

4. A head restraint according to Claim 1, wherein:  
the magnet is a compound magnet including a  
10 permanent magnet and an electromagnet, and  
the compound magnet is operative so that energizing  
the electromagnet results in a weakening of said magnetic  
field, and the weakening of said magnetic field causes  
the locking unit to transition to the unlocked state.

15 5. A head restraint according to Claim 4, wherein:  
the drive is prebiased for moving the second  
subassembly forward relative to the first subassembly;  
and  
20 the electromagnet is deenergized during the locked  
state, whereby said magnetic field is provided solely by  
the permanent magnet during the locked state.

25 6. A head restraint according to Claim 1, wherein:  
the drive:  
is in a first configuration during the locked  
state,  
is in a second configuration as the drive  
completes the moving of the second subassembly forward  
30 relative to the first subassembly, and  
is biased toward the second configuration,  
whereby the drive moves the second subassembly forward  
relative to the first subassembly during the unlocked  
state; and

the locking unit further comprises a retaining means for being acted upon by the magnetic field of the magnet and thereby retaining the drive in the first configuration during the locked state.

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7. A head restraint according to Claim 6, wherein the retaining means is further for releasing the drive in the unlocked state, whereby the drive transitions from the first configuration to the second configuration and thereby moves the second subassembly forward relative to the first subassembly.

8. A head restraint according to Claim 6, wherein the retaining means comprises pivotable, spring-loaded components.

9. A head restraint according to Claim 6, wherein:  
the drive comprises a spring; and  
the retaining means comprises:  
a catch that is mounted for moving between open and closed configurations, wherein the catch is biased toward the open configuration, and the catch at least indirectly secures the drive while the catch is in the closed configuration during the locked state, and  
a retaining element for retaining the catch in the closed configuration during the locked state, wherein the retaining element is an intercepting element or a retaining spring.

10. A head restraint according to Claim 9, wherein the retaining element is the intercepting element and the intercepting element retains the catch in the open configuration during the unlocked state.

11. A head restraint according to Claim 6, wherein the retaining means comprises a plate that is attracted to the magnet due to the magnetic field, and the plate is mounted so that:

5 the plate is proximate the magnet during the locked state, and

the plate carries out a tilting or pivoting movement while the locking unit transitions from the locked state to the unlocked state.

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12. A head restraint according to Claim 11, wherein:

the retaining means further comprises:

15 a catch that is mounted for moving between open and closed configurations, wherein the catch is biased toward the open configuration, and the catch at least indirectly secures the drive while the catch is in the closed configuration during the locked state, and

20 a movably mounted retaining element for retaining the catch in the closed configuration during the locked state; and

the clamping plate is connected in an articulated manner to the retaining element.

25 13. A head restraint according to Claim 11, wherein:

the retaining means further comprises:

30 a catch that is mounted for moving between open and closed configurations, wherein the catch is biased toward the open configuration, and the catch at least indirectly secures the drive while the catch is in the closed configuration during the locked state, and

a release means for holding the catch in the closed configuration and releasing the catch so that the

catch moves from the closed configuration to the open configuration; and

the plate is connected to the release means.

5           14. A head restraint for a vehicle seat, wherein the head restraint operates favorably in response to an event of predetermined magnitude, and the head restraint comprises:

          a first subassembly;

10           a second subassembly mounted for moving forward relative to the first subassembly;

          a drive mounted for moving the second subassembly forward relative to the first subassembly, wherein the drive is in a first configuration prior to the moving of  
15 the second subassembly forward relative to the first subassembly, the drive is in a second configuration as the drive completes the moving of the second subassembly forward relative to the first subassembly, and the drive is biased toward the second configuration; and

20           a locking unit operative for having:

          a locked state prior to the event of predetermined magnitude, wherein the locking unit prevents the drive from transitioning from the first configuration to the second configuration while the  
25 locking unit is in the locked state, and

          an unlocked state in response to the event of predetermined magnitude, wherein the locking unit does not prevent the drive from transitioning from the first configuration to the second configuration while the  
30 locking unit is in the unlocked state, whereby the drive moves the second subassembly forward relative to the first subassembly during the unlocked state,

          wherein the locking unit includes:

          a magnet, and

a retaining means for functioning so that the magnet operates via the retaining means to maintain the locking unit in the locked state.

5           15. A head restraint according to Claim 14, wherein the retaining means is further for releasing the drive in the unlocked state, whereby the drive transitions from the first configuration to the second configuration and thereby moves the second subassembly forward relative to  
10 the first subassembly.

          16. A head restraint according to Claim 15, wherein the retaining means comprises pivotable, spring-loaded components.

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          17. A head restraint according to Claim 14, wherein:

          the drive comprises a spring; and  
          the retaining means comprises:

20           a catch that is mounted for moving between open and closed configurations, wherein the catch is biased toward the open configuration, and the catch at least indirectly secures the drive while the catch is in the closed configuration during the locked state, and

25           a retaining element for retaining the catch in the closed configuration during the locked state, wherein the retaining element is an intercepting element or a retaining spring.

30           18. A head restraint according to Claim 17, wherein the retaining element is the intercepting element and the intercepting element retains the catch in the open configuration during the unlocked state.

19. A head restraint according to Claim 14, wherein the retaining means comprises a plate that is attracted to the magnet, and the plate is mounted so that:

5 the plate is proximate the magnet during the locked state, and

the plate carries out a tilting or pivoting movement while the locking unit transitions from the locked state to the unlocked state.

10 20. A head restraint according to Claim 19, wherein:

the retaining means further comprises:

15 a catch that is mounted for moving between open and closed configurations, wherein the catch is biased toward the open configuration, and the catch at least indirectly secures the drive while the catch is in the closed configuration during the locked state, and

20 a movably mounted retaining element for retaining the catch in the closed configuration during the locked state; and

the clamping plate is connected in an articulated manner to the retaining element.

25 21. A head restraint according to Claim 19, wherein:

the retaining means further comprises:

30 a catch that is mounted for moving between open and closed configurations, wherein the catch is biased toward the open configuration, and the catch at least indirectly secures the drive while the catch is in the closed configuration during the locked state, and

a release means for holding the catch in the closed configuration and releasing the catch so that the

catch moves from the closed configuration to the open configuration; and

the plate is connected to the release means.

5           22. A method of operating a head restraint having a first subassembly, a second subassembly mounted for moving forward relative to the first subassembly, and a drive mounted for moving the second subassembly forward relative to the first subassembly, the method comprising:  
10           using a magnetic field to prevent the drive from moving the second subassembly forward relative to the first subassembly prior to an event of predetermined magnitude.

15           23. A method according to Claim 22, wherein the magnetic field is a first magnetic field, and the method further comprises counteracting the first magnetic field with a second magnetic field to thereby enable the drive to move the second subassembly forward relative to the  
20           first subassembly, with the counteracting being responsive to the event of predetermined magnitude.